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INTELLECTUAL PROPERTY AND TECHNOLOGY
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APPL NO.:10/718,351 UNIT ART NO: 3749 FILING DATE: 11-21-2003 EXAMINER: ALFRED BASICHAS
INVENTION TITLE: A METHOD AND DEVICE FOR COMBUSTING LIQUID FUELS USING HYDROGEN
CONFIRM. NO.: 9879

AMENDMENTS TO THE CLAIMS

What is claimed and desired to be secured by United States Letters Patent is:

1. (currently amended) A method of combusting a liquid primary fuel comprising the steps of:

establishing a zone of (combusting hydrogen) combustion, spaced from a fuel nozzle, and defined by a flame of ignited hydrogen,

injecting a mechanically atomized stream of liquid primary fuel through the zone of combusting hydrogen such that a substantial portion of the liquid primary fuel contacts the hydrogen flame front and hot product gases, and

igniting the vaporized portion of the primary fuel by the hydrogen flame.

dispersing a liquid primary fuel through said nozzle into the zone of combustion in a partially vaporized and partially atomized state, and

burning the vaporized liquid primary fuel and the atomized liquid primary fuel entering said zone of combustion.

2. (currently amended) The method of claim 1 wherein the hydrogen combustion zone zone of combustion is established by the steps of:

providing flowing a pressurized source of hydrogen at a controlled rate through a plurality conduits each with having a discharge opening adjacent to into said hydrogen combustion zone zone of combustion,

igniting the hydrogen discharging from the conduits discharged through said discharge opening to produce a hydrogen flame; and

rotating the conduits about a central axis to simulate a continuous zone of combusting hydrogen hydrogen flame about a longitudinal axis of the zone of combustion.